

[GATE STRUCTURE FORMING METHOD OF FIELD EFFECT TRANSISTOR]

Abstract

A method of forming a gate structure includes forming sequentially a pad layer and a first photoresist layer over a substrate. A cross-linked surface layer is formed on the surface of the first photoresist layer, followed by rounding the profile of the first photoresist layer, and removing the exposed pad layer to expose the substrate. A second photoresist layer is formed over the first photoresist layer, wherein a portion of the first photoresist layer and the exposed substrate are exposed by the second photoresist layer. Thereafter, a conductive layer is formed, wherein the conductive layer formed on the second photoresist layer is separated from the conductive layer formed on the first photoresist layer and the exposed substrate. The first and the second photoresist layers are removed while the conductive layer on the second photoresist layer is concurrently being striped. The remaining conductive layer serves as a gate structure.